

REMARKS

Claims 24, 25, 27-32, 35, 37-54 and 56-74 remain pending after amendment, with claims 57-68 being withdrawn from consideration.

Withdrawal of Previous Rejections

Applicant acknowledges with appreciation *the withdrawal* of the following rejections:

- (1) The 35 USC 103(a) rejection over Glasser in view of Tanglertpaibul;
- (2) The 35 USC 103(a) rejection over Glasser in view of Benefits;
- (3) The 35 USC 103(a) rejection over Glasser in view of Terrytx; and
- (4) The 35 USC 103(a) rejection over Bueno.

Applicant's Invention

By way of review, in one embodiment (claims 24, 25, 69, 70) applicant's invention is directed to a tomato composition obtained from tomato juice or tomato passatas having the following composition in percentage by weight:

-dry residue 5.5 - 20%,

-water 94.5-80%,

100% being the sum of the two components,

wherein said dry residue comprises water-insoluble tomato solids and water-soluble tomato solids, wherein the amount of water-insoluble tomato solids and water-soluble tomato solids in the dry residue ranges in percentage by weight as follows, based on the total weight of the dry residue:

-water-insoluble tomato solids from 18% to 30%,

-water-soluble tomato solids from 82% to 70%.

In another embodiment (claims 45-56, 71, 72, 75-78), applicant's invention is directed to a tomato product prepared by a process comprising separating by filtration tomato serum from water insoluble solids present in either tomato juice or in tomato passatas using a separation solid-liquid apparatus at a temperature of from 5 to 25°C wherein said tomato juice or tomato passatas is maintained under stirring with a stirrer at an angular speed from 1 rpm to 20 rpm during filtration, the stirrer being of a shape to convey the tomato juice or tomato passatas toward the central axis of the apparatus, and recovering said tomato serum and/or said water insoluble solids as said tomato product.

In yet another embodiment (claims 37-38), applicant's invention is directed to a method of saucing food utilizing the tomato composition of the present invention.

In still yet another embodiment (claims 39-40), applicant's invention comprises a ready-to-use tomato sauce for food.

In yet further embodiments (claims 27-32, 35, 41-44, 73, 74), applicant's invention is directed to foods comprising the novel tomato composition of the present invention.

The problem to be overcome by applicant's invention is the providing of tomato products having an improved saucing power – in particular, for use with pasta. In the background discussion of applicant's specification, it is stated that tomato products have been prepared from tomato juice obtained by fruit trituration, and seed and peel separation. Tomato juice is an aqueous suspension of insoluble solids in an aqueous solution. From the tomato juice, other

products such as tomato passatas and tomato concentrates can be obtained by means of a concentration process. Such processes have conventionally included reverse osmosis, cryoconcentration, and concentration by evaporation (page 1 of applicant's specification).

With reverse osmosis, temperatures on the order of 70°C are employed in order to have the necessary concentration yield. Further, the reverse osmosis membrane must be cleaned to remove pollutants. Cryoconcentration is inapplicable due to the high solids content of tomato suspensions. In practice, concentration by evaporation is used commercially. The amount of heat required for evaporation, the duration thereof and the maximum temperature employed combine to result in organoleptic and nutritional variations of the resulting tomato product. Such variations include caramel taste, typical cooking odor, and the degradation of carotenoids present in the tomato (such as lycopene).

As discussed at page 2 of the specification, the majority of commercial products, which are to be diluted with water prior to use, comprise the following components:

Semiconcentrate	12% dry residue
Concentrate (C)	18% dry residue
Double concentrate (DC)	28% dry residue
Triple concentrate (TC)	36% dry residue

As the concentrated products are diluted before and during use, the saucing power of the TC (before dilution) is higher than that of the other commercial tomato products due to the higher content of dry residue. "Saucing power" means the capability of the tomato product to stick to foods to which it is combined. However, the concentrated products must be diluted

before their use due to their strong and unpleasant taste, and the advantage of their high saucing power is lost upon dilution.

Generally, all commercial tomato concentrates having a dry residue $>12\%$ by wt. exhibit taste problems, and must be diluted, and the saucing power lost. Semiconcentrates (dry residue 12% by wt.) do not require any dilution, as they have a pleasant taste, but on the other hand, exhibit poor saucing power. The same can be said for tomato passatas which, as is well known, have a dry residue of $\leq 10\%$ by wt.

The claimed invention overcomes the above problems. Applicant has surprisingly and unexpectedly been able to provide tomato products which require neither dilution nor concentration prior to use, while exhibiting improved saucing power.

Applicant's tomato products are obtained by a process as described in applicant's specification. As a result of the claimed invention, it is possible to adjust the ratio of water-insoluble solids/water-soluble solids in the dry residue. By varying the amount of water-soluble solids in the total solids, the taste properties can be suitably adjusted.

Further, applicant has unexpectedly and surprisingly found that the tomato products of independent claim 24 may have fats incorporated therein without serum separation (see page 5 of the specification). Such compositions can accordingly be used as a ready-to-use tomato sauce. The tomato products of the present invention have improved saucing power, as well as improved organoleptic and nutritional properties, particularly in comparison with commercial tomato products. This combination of properties – saucing power combined with improved organoleptic properties without a caramel or bitter/sour taste – is completely absent from prior art tomato compositions or products.

Applicant has found that the amount of water-insoluble solids in the tomato product, in order to confer the desired properties such as saucing power, must be at least 18% by wt., preferably 20% by wt, of the dry residue. It is important to note that the amount of water-insoluble solids in commercial tomato products is not greater than 15% by wt. in the dry residue.

As discussed above, the claimed tomato products maintain desirable organoleptic and nutritional properties of the fresh tomato. This is a great advantage over prior art products. It is to be noted that the taste of prior art commercial tomato products depends on the variety of tomatoes used as well as their ripeness. By contrast, applicant's claimed products exhibit a constant taste from one production batch to another. This satisfies a long-felt need in the industry.

Applicant's claimed invention in its various embodiments is neither disclosed nor suggested by the cited prior art.

Rejection under 35 USC 103(a)

Claims 24, 25, 27-32, 35, 37-54, 56 and 69-74 stand newly-rejected under 35 USC 103(a) as being unpatentable over Bueno in view of de la Cuadra et al (newly-cited).

This rejection is respectfully traversed as the Examiner fails to present a *prima facie* case of obviousness in relation to the cited prior art.

Distinctions over Bueno

The Examiner takes the position at page 3 of the Action that "Bueno teaches of a tomato composition prepared from tomatoes containing tomato juice, by a process comprising heating the tomatoes to inactivate enzymes and separation of tomato serum from water-insoluble solids

using a separation solid-liquid apparatus wherein the tomato juice is maintained under stirring (Abstract).”

Indeed, Bueno is directed to a process for preparing tomato-based products by the steps of heating raw tomatoes for a time sufficient to inactivate enzymes present therein; separating a juice and a slurry containing seeds and peels; separating the seeds and peels from the slurry; dividing the separated slurry; and reincorporating the divided slurry into the juice.

Consistency is an important attribute of tomato juice in the industry - in particular, a higher consistency represents a better quality. Further, consistency has no fixed relationship with solids content. Therefore, two lots of tomato juice having identical solids contents can have completely different consistencies.

In the prior art, the method for obtaining high consistency tomato juice involves adding an acid to a tomato macerate under heat. Then, the acidified macerate is treated to separate the juice from the skins and seeds, and the juice cooled and restored to its original pH with sodium hydroxide. The acid treatment is essential in such a process. In other prior art processes, acid is supplied to the juice extracted from the tomato.

Other prior art processes disclose the use of pectinesterase in the preparation of food containing fruit or vegetables to demethoxylate the pectin, followed by the addition of calcium chloride to allow the mixture to form a gel. In this way, the viscosity increases and allows the preparation of a high consistency food product. Finally, tomatoes usually contain from 7 to 8.5% total solids. During the processing of raw tomatoes into tomato juice paste, components useful in nutritional terms and valuable food tissues are lost.

Bueno recuperates tomato residues during processing to yield less damaged products by using a lower temperature to get a higher consistency and/or higher yield of tomato paste or juice by using the process described above.

In step (1), the temperatures used in order to obtain very high consistency are on the order of 110-140°C. However, such temperatures are detrimental to vitamins present in the tomato, as well as to its color and flavor. If a high consistency is desired, temperatures range from 90 to 110°C. For less acceptable tomato consistency, temperatures of 65 to 90°C may be employed.

In step (2), the extraction of tomato juice is carried out by use of commercially available sieve extractors.

Bueno observes that the extraction of chopped tomatoes eliminates as residue 2-5% of the original tomato solids. Since this would be detrimental for the taste and color of the tomato juice, Bueno teaches the reintroduction of the slurry into the juice. See the paragraph bridging pages 4 and 5 of Bueno.

Further, Bueno incorporates the peels and separated seeds in the separated slurry, before the dividing step, allowing the introduction of high amounts of lycopens, pectins and tomato flavors, which would otherwise be lost. The reincorporation of the slurry into the tomato juice allows the attainment of high-consistency tomato juice without detrimental effect on color and taste (see page 5, lines 20-26). At Table 3, Bueno reports the products obtained in Example 1, with regard to which the dry matter (% DM) is 29.34 (or 28.98 with a treated slurry), and the Brix is 28.27 (or 28 with a treated slurry). The water-insoluble solids in the dry residue is 4%.

The % dry matter (DM) in Example 2 is stated to be 32%. Such amounts are outside the ranges recited in applicant's claims.

In view of the above, it is clear that Bueno alone neither teaches nor suggests the claimed invention, a fact recognized by the Examiner in the Action.

Bueno is also completely silent with regard to the technical problem successfully addressed by applicant's invention – improved saucing power, particularly with respect to pasta.

Applicant's claim 24 states that the tomato compositions are obtained from tomato juice or tomato passatas. In the background of the specification it is stated that prior art commercial products must be diluted before use – a typical requirement for concentrated products. The tomato products of claim 24 require neither dilution nor concentration prior to use, possess improved saucing power, and improved organoleptic properties (devoid of caramel taste, bitter taste, cooking aroma, sour taste).

By contrast, the technical problem to be solved by Bueno relates to high consistency tomato products. The compositions of Bueno have a tomato solids content DM of about 29%, as reported at Table 3, wherein the soluble tomato solids on the dry residue amount to 96% and the tomato insoluble solids is about 4% based on the dry residue, each amount being outside of the limitations of the claimed invention.

Thus, not only is Bueno technically irrelevant to the claimed invention, but the Examiner correctly acknowledges at page 4 of the Action that Bueno fails to teach or suggest the following limitations of applicant's pending claims:

- a. The tomato composition as including 5.5-20% dry matter (claims 24, 27, 37, 39, 45);
- b. Water-insoluble tomato solids in an amount of 18-30% and water-soluble tomato solids in an amount of 70-82% based on the amount of dry residue (claims 24, 27, 37, 39, 45);

- c. The presence of 10-25% fats or oils (claims 27-31, 35, 40);
- d. The presence of 10-25% or 50-300% cheese (claims 32, 73, 74);
- e. The combination with food such as pasta, meat, fish or vegetables (claim 38);
- f. The use of a separator at an angular speed of 1-20 rpm (claims 45, 52);
- g. The use of a separation sieve under an oscillating motion of 1-20 oscillations/minute (claim 46);
- h. A sterilized composition or a composition processed under sterile conditions (claim 47);
- i. Separation under a temperature of 10-15°C (claim 48);
- j. An apparatus having separation holes (claims 49, 50, 51, 53, 54);
- k. A tomato serum concentrated by osmosis or evaporation (claim 56); and
- l. A tomato product obtained from tomato passatas (claims 70, 72).

Applicant notes that limitations (c)-(l) above each reside in claims that depend from independent claims 24, 27, 37, 39 and 45, while the independent claims each contain limitations (a) and (b).

In an attempt to cure the acknowledged deficiencies of Bueno, the Examiner now relies on the newly-cited de la Cuadra et al reference (Cuadra).

Distinctions over Cuadra

Applicant initially notes that the instantly-claimed priority date for the corresponding Italian application is *August 8, 2002* which antedates the *May 27, 2003* effective date of Cuadra.

CLAIM FOR PRIORITY AND SUBMISSION OF VERIFIED TRANSLATION

The Applicant hereby claims priority under 35 U.S.C. 119 based on Italian Patent Application No. MI2002 A 001801, as originally filed on August 8, 2002. A certified copy of the Italian application is of record in the U.S. Patent File and has been acknowledged by the Examiner.

Applicant submits herewith a verified translation of the Italian priority application to perfect the claim for priority. Accordingly, continued reliance on Cuadra by the Examiner is improper.

Notwithstanding the fact that the Cuadra reference should no longer be relied upon by the Examiner, applicant submits the following comments which confirm that the teachings of the Cuadra reference, taken either singly or together with Bueno, do not result in the claimed invention.

Cuadra is directed to a tomato-based product having a thick consistency and method of production thereof. The invention of Cuadra is described in the Summary of Invention (paragraph [0009]):

It has now been found that a product comprising a tomato composition *having a ratio soluble tomato solids:insoluble tomato solids of between about 1:0:0.5 and about 1.0:20* can have excellent properties for a wide range of applications. Such a product can have the consistency of conventional concentrated tomato paste (or even thicker), without the concentrated flavour. This makes it possible to have a tomato-based product having thick consistency with good flavour, and without the need for additional (non-tomato) thickeners as gums and starches. In the products according to the invention, it is preferred that the ratio soluble tomato solids:insoluble tomato solids is above about 1.0:0.7, more preferably above about 1.0:0.8, most preferred above about 1.0:1.0 or even above about 1.0:1.5. The upper limit of said ratio is preferably about 1.0:10, or about about 1.0:5.0. Thus, preferred ranges for the soluble tomato solids:insoluble tomato solids are, e.g., about 1.0:0.7 to about 1.0:10, preferably about 1.0:0.8 to about 1.0:10. Most

preferred ratios are between about 1.0:1.0 and about 1.0:5.0, or even about 1.0:1.5 to about 1.0:5.0. (emphasis added)

The method by which the product of Cuadra is made is summarized in the Abstract as follows:

Tomato-based products having a thick consistency and a process for preparing the same. The process comprises the steps of hot- or cold-breaking tomatoes, separating the resulting product into a product (a) rich in soluble tomato solids and water, and a product (b) rich in the insoluble tomato solids and water, optionally subjecting product (a) to a concentration step such that it is at least 10° Brix and recombine product (a) and product (b) to a product (c) in *such ratios that the resulting product has a ratio soluble tomato solids:insoluble tomato solids of between 1.0:0.5 and 1.0:20*. (emphasis added)

It is thus clear that the intent of Cuadra is to provide a tomato-based product having a relatively thick consistency which has a *high ratio of insoluble:soluble tomato solids* – i.e., a ratio within the range of 2:1 to 1:20 soluble:insoluble tomato solids. The invention of Cuadra is accordingly distinguishable from the invention claimed in the present application.

The claimed invention requires the presence of 5.5 to 20% dry residue, with the dry residue comprising from 18-30% water-insoluble tomato solids, and from 70-82% water-soluble tomato solids. Calculating the respective ratios of water-soluble/water-insoluble tomato solids using the respective high and low ends of these ranges (70/30 and 82/18), ratios of 2.33:1 to 4.55:1 water-soluble/water-insoluble solids result. *This confirms that the claimed invention requires the water-soluble solid component to predominate in relation to the water-insoluble solid component.*

This is distinct from Cuadra which specifies a ratio of 2:1 to 1:20 water-soluble solids/water-insoluble solids. The reference thus seeks to produce a pasty (thick) product, which includes water-insoluble solids in amounts which can be orders of magnitude greater than

provided for in the claimed invention in relation to the amount of water-soluble solids that are present.

By way of further distinction, the pending claims recite the presence of *80-94.5% water*. Not only is the reference generally silent with respect to the amount of water present, the amount recited in the claims appears to be greater than any amount contemplated by Cuadra, particularly since a pasty (thick) product is contemplated. The Examiner ignores this deficiency, stating at page 4 of the Action that “Cuadra teaches that the tomato composition may contain more or less water depending on the desired end product (paragraphs 0016 and 0017).” The referenced paragraphs do not provide any specificity as to the amount of water present, merely stating that the amount of water present purportedly may be modified as desired. Such a teaching, however, fails to provide the specificity or guidance necessary to render obvious the recited limitation. In any event, the fact that the reference intends to provide a pasty (thick) tomato product clearly teaches away from the presence of water in the amounts recited in the pending claims.

Cuadra thus not only fails to teach or suggest limitation (b) above, but also the limitation requiring water to be present in the stated range. In essence, Cuadra fails to cure the deficiencies of Bueno as to either of limitations (a) and (b) above.

The Examiner summarizes the teachings of Cuadra at pages 4-5 of the Action:

- The reference teaches of tomato based products which are formed by separating a tomato juice into a first stream heavy with tomato insoluble solids and a second stream with tomato insoluble solids and recombining the streams into particular tomato soluble:tomato insoluble ratios (Abstract):

- The reference teaches that the amount of tomato solids affects the flavor and consistency of the tomato product (paragraph [0009]);
- The reference teaches that the tomato composition may contain more or less water depending on the desired end product (paragraphs [0016-0017]);
- The reference teaches that the tomato composition contains at least about 0.5%, preferably 2-50% of olive oil, cheeses, butter, spices and combinations thereof (paragraph [0029]);
- The reference teaches that the product of the invention may be in the form of ketchup, pasta sauce, or vegetable spreads (paragraph [0030]); and
- The reference teaches of adding the tomato composition to a serum concentrated by evaporation, i.e., treated by boiling, in order to form a tomato mousse product (Example 5).

Despite the fact that such statements of the Examiner have little, if anything, to do with the claim limitations, the Examiner takes the view that the claimed invention (as it pertains to dry matter, water-insoluble and water-soluble solids, and water content) would be obvious in view of the combined teachings of Bueno and Cuadra, stating at page 5 of the Action:

Regarding the tomato composition as including 5.5-20% dry matter, it would have been obvious to one of ordinary skill in the art at the time the invention was made to increase the amount of water in the tomato composition if the final product to be produced was a soup, so that the soup was in a pre-made form and the tomato composition did not need to be diluted upon consumption. To adjust the water content of the tomato composition based upon the desired final product would have been obvious and within the routine determination of one of ordinary skill in the art at the time the invention was made as taught by Cuadra.

Regarding the water-insoluble tomato solids as about 18-30%, preferably 20-30%, of the dry residue and to the water-soluble tomato solids as 70-82%,

preferably 70-80% of the dry residue, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the tomato soluble solids and tomato insoluble solids depending on the desired viscosity, texture, and flavor of the final tomato composition. To adjust the tomato soluble solids levels and tomato insoluble solid levels in a tomato composition depending on the desired properties of the final product was known as taught by Bueno and Cuadra and would be routine determination and would not impart a patentable distinction to the claims absent criticality or unexpected results.

The Examiner's position is speculative at best, and clearly based on an improper hindsight analysis of the claimed invention. It is acknowledged that Bueno fails to teach the requisite dry matter and solids limitations. Cuadra is silent with regard to dry matter, and teaches water-insoluble and water-soluble tomato solids amounts outside of the claimed range.

Cuadra is also silent with respect to the amount of water present, merely stating that the amount of water present can be modified as desired. As such a teaching cannot logically be extended outside of the intent of the reference, it is inconsistent with the teachings of the reference to employ an amount of water corresponding to that provided for in applicant's claims but not otherwise contemplated by and inconsistent with the reference. In other words, the Examiner, when faced with a lack of adequate teachings in the cited references, nonetheless takes the position (without factual support) that it would be obvious to arrive at the claimed invention by modifying the prior art in a manner not otherwise contemplated by the prior art. The Examiner ignores the fact that it is the *combined* effect of the amount of water, amount of dry solids, and water-insoluble and water-soluble tomato solids that enables the claimed invention to achieve the highly desirable result of improved saucing power together with other advantages.

Indeed, the problem to be solved by Cuadra resides in preparing tomato-based products having thick consistency and the process for their preparation. Of course, such tomato products can be used as pasta sauce, ketchup, pizza toppings, juices, etc., as is conventional in the art.

A person of ordinary skill in the art does not, however, find in the disclosure of Cuadra any motivation or suggestion by which to prepare applicant's claimed composition in order to obtain a tomato composition with improved saucing power. Clearly then, such person would not be able to modify Bueno with Cuadra in order to arrive at a tomato composition having improved saucing power combined with improved organoleptic properties – i.e., being devoid of any caramel taste, bitter taste, cooking aroma, or sour taste. The Examiner's attention is again directed to Table 7 of the specification in this regard.

As noted above, the Examiner states that it would have been obvious for the person skilled in the art to increase the amount of water in the tomato composition if the final product to be produced was a soup, so that the soup was in a pre-made form, and the tomato composition did not need to be diluted upon consumption. The Examiner further states that it would have been obvious for the person skilled in the art to adjust the water content based upon the desired final product by routine experimentation as taught by Cuadra. It is again noted that “dry residue” is never mentioned in Cuadra. Bueno describes a composition with far higher dry residue amounts than employed by applicant (about 29% and 32%). It would therefore not have been obvious for one skilled in the art to arrive at a tomato composition wherein dry residue is present in the amounts required by the claims. As to the adjustment of the amounts of water present, it is *not* a matter of routine experimentation as suggested by the Examiner to arrive at the amount of water employed by applicant. Indeed, given the above distinctions that exist between the

claimed invention and the cited prior art, one of ordinary skill in the art would lack *any* reason to modify the amount of water present in the manner asserted by the Examiner.

It is even more illogical to assume that such modification in the amount of water present would occur *together with* the asserted modification of the amount of dry residue and the amount of water-insoluble and water-soluble tomato solids contained in the dry residue. Again, it is the *combination* of such limitations that results in the improved saucing power of the tomato compositions of the present invention as well as the other advantages that result.

In view of the above, the invention defined by the independent claims patentably distinguishes over the cited prior art. As the independent claims have been shown to be distinguishable over the prior art, those claims depending therefrom also patentably distinguish over the cited prior art.

The rejection over Bueno and Cuandra is accordingly without basis, and should be withdrawn.

Conclusion

It is respectfully submitted that the Examiner has not met the tests set forth by the Courts to support a *prima facie* case of obviousness. It is the applicant's view that hindsight reconstruction is being used to allegedly assert obviousness against the claims in the present application. Having established unobviousness for the independent claims, it is clear that the remaining claims should also be allowable.

The foregoing remarks are fully responsive to the Office Action of October 27, 2008. Thus, favorable consideration and allowance of the claims are respectfully requested.

Application No. 10/524,014
Amendment dated April 14, 2009
Response to Office Action dated October 27, 2008

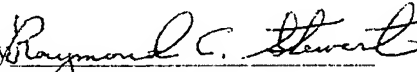
Docket No.: 5059-0102PUS1

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond C. Stewart, Reg. No. 21,066 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Date: April 14, 2009

Respectfully submitted,

By 

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Attachment: Verified translation of Italian priority document
Application No. MI2002 A001801